

What is claimed is:

1. A method for fabricating three-dimensional structures,

comprising:

forming a first resist layer on a substrate;

exposing a first pattern on said first layer;

forming a second resist layer on top of said first layer;

exposing a second pattern on said first layer in at least partial

vertical alignment with the first pattern; and

thereafter developing said first and second layers to produce a structure having levels corresponding to said exposed patterns.

2. The method of claim 1, further including successively forming multiple additional resist layers on preceding exposed layers and individually exposing each additional layer, and thereafter developing all of said resist layers.

3. The method of claim 1, further including:

exposing said first layer with plural vertically aligned patterns

prior to forming said second resist layer.

4. The method of claim 3, further including:

exposing said second layer with plural vertically aligned patterns

prior to developing said layers.

5. The method of claim 1, further including:

exposing said second layer with plural vertically aligned patterns

prior to developing said layers.

6. A method for fabricating three-dimensional structures,

comprising:

forming a first resist layer on a substrate;

forming a second resist layer on top of said first resist layer;

exposing a first pattern on said second resist layer;

forming a third resist layer on top of said second layer; and

developing the exposed pattern in said second layer to produce enclosed channels extending between said first and third layers.

7. A method for fabricating three-dimensional structures, comprising:

forming at least a first lithographically-definable layer on a substrate;

performing a first lithographical definition of said first layer;

forming at least a second lithographically-definable layer on said first layer;

performing a second lithographical definition of said second layer; said second lithographic definition overlapping at least in some regions with said first lithographic definition;

developing said first and second layers.

8. The method of claim 7, further including:

forming on said first layer a first barrier layer before performing

said first lithographical definition of said first layer.

9. The method of claim 7, further including:

forming barrier layers on each of said lithographically-definable layers.

10. A three-dimensional structure, comprising:

a first lithographically-defined layer;

a second lithographically-defined layer on top of said first layer;

said second layer being mechanically supported by first layer.

11. The three-dimensional structure of claim 10, including:

a barrier film positioned at the interface between said first and second layers.